A NEW APPROACH TO RECOMMENDATION OF SUGARCANE (SACCHARUM OFFICINARUM L.) VARIETIES FOR DIFFERENT AGROCLIMATIC REGION IN SRI LANKA

B.W.M.J. Basnayake* and R.O. Thattil**
*Sugarcane Research Institute, Uda Walawe
**Postgraduate Institute of Agriculture, Peradeniya.

Six sugarcane varieties namely Co 775, CO 62175, M 351/57, K 7771, K 7785 and K 77266 were planted in a randomized block design with three replications, and this trial was repeated over six environments, namely well drained and ill-drained soils at Kantale, Mahiyangana and Hingurana. Data was collected on the sugarcane yield, commercial cane sugar and fibre percentage which are economically the most important parameters.

The environmental effect was partitioned into soil type and the site effects, while the G X E interaction was further partitioned to include soil type x variety, site x variety and soil type x site x variety interaction.

The environmental indices were computed and the regression was performed between the environmental index and the site mean of the each variety for each parameter. The regression coefficient (b_i) and the deviation from regression (λ_i) were considered as the stability parameters for each of the different genotypes.

A genotype having $b_i = 1$, $\lambda_i = 1$ will be considered as a generally adapted and average stable variety, while $b_i = 0$ and $\lambda_i = 1$ will be identified as a perfectly stable variety in all environments.

Non of the tested genotypes are stable for the three economically important characters in the six environments. Co 62175 (120.3 MT/ha.) and K 7785 (109.4) have shown general adaptability and average stability for cane yield. As far as the commercial cane sugar is concerned K 7785 (11.9%) and Co 62175 (11.8%) have shown the higher mean valuable but, comparatively below average stability was observed in Co 62175. K 7771 (14.49%) has shown above average stability for fibre percentage but it was recorded as a high fibre variety. Co 62175, Co 775 and K 7785 were recorded as low fibre varieties but, exhibited below average stability in the tested environments.

Considering all the stability parameters the genotypes Co 62175 and K 7785 can be recommended for high sugar production and the wide adaptation in the tested environments.